

SVETLANA TECHNICAL DATA

3CW20,000H7 High-Mu Power Triode



The Svetlana™ 3CW20,000H7 is a high-performance ceramic/metal, water cooled power triode designed for use in zero-bias class B RF, audio amplifier, DC voltage or current regulator, or high voltage pulsed or switch tube service. A modern mesh filament is used, replacing the old-fashioned hairpin construction. The improved mesh filament design ensures better mechanical rigidity and long lasting concentricity of the filament, providing enhanced linearity, less noise, reduced warm-up variation and longer life. The low-inductance, mesh-filament basket also forms a natural extension of the cylindrical stem geometry into the active area, giving superior VHF performance to 200MHz. The anode and grid flanges provide ease of mounting regardless of application.

The Svetlana 3CW20,000H7 is manufactured in the Svetlana Electron Devices complex in St. Petersburg, Russia. Svetlana has achieved the improved performance described above with exact replacement compatibility with the 3CW20,000H7 manufactured in the United States.

Characteristics

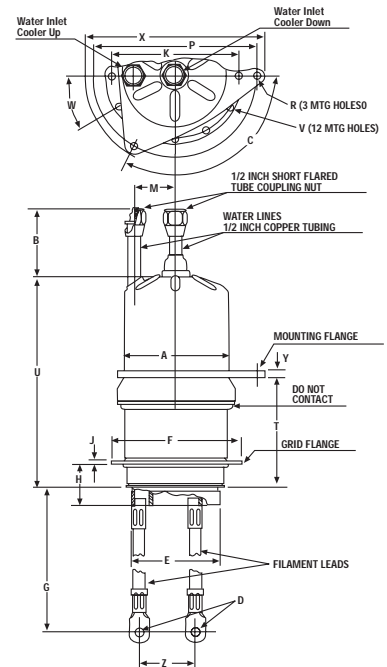
Electrical

Filament	Thoriated-tungsten mesh
Voltage	7.50 ±0.37V
Current @ 7.50V	100A
Amplification factor (average)	200
Direct interelectrode capacitances:	
Grid to filament	59.0pF
Grid to anode	36.0pF
Filament to anode	0.2pF
Maximum frequency for full ratings (CW)	200 MHz

Mechanical

Cooling	Water and forced air
Base	Grid contact flange and flying leads
Operating position	Vertical, Anode up or down
Maximum operating temperature	250° C
Maximum dimensions:	
Length	285 mm (11.22 in.)
Diameter	119.4 mm (4.7in.)
Net weight	5.45 kg (12 lb)

Svetlana Outline drawing



Dimensional Data

	Millimeters			Inches		
	Min.	Max.	Ref.	Min.	Max.	Ref.
A	103.99	105.56	----	4.094	4.156	----
B	56.72	71.42	----	2.312	2.812	----
C	118°	122°	----	118°	122°	----
D	----	----	9.91	----	----	0.390
E	82.04	83.06	----	3.230	3.270	----
F	127.76	129.29	----	5.030	5.090	----
G	215.90	228.60	----	8.500	9.000	----
H	31.24	39.62	----	1.229	1.560	----
J	----	----	3.18	----	----	0.125
K	112.40	112.90	----	4.425	4.445	----
M	38.10	44.45	----	1.500	1.750	----
P	151.31	153.04	----	5.957	6.025	----
R	----	----	6.73	----	----	0.265
T	110.49	113.03	----	4.350	4.450	----
U	200.74	213.44	----	7.903	8.403	----
V	----	----	6.35	----	----	0.250
W	29°	31°	----	29°	31°	----
X	----	----	171.45	----	----	6.750
Y	----	----	6.35	----	----	0.250
Z	----	----	50.80	----	----	2.000



Svetlana
ELECTRON DEVICES

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ELECTRON DEVICES

Cathode-Driven Radio Frequency Linear Amplifier, Class B

Maximum Ratings			
DC plate voltage	7,000	V	
DC plate current	5.0	A	
Plate dissipation	20	kW	
Grid dissipation	500	W	

Typical Operation			
DC plate voltage	7000	7000	V
Zero-signal DC plate current*	0.60	0.60	A
Single-tone DC plate current	3.72	5.00	A
Grid bias	0	0	V
Single-tone DC grid current*	0.71	1.00	A
Peak driving power	885	1540	W
Single-tone plate output power	17.7	24.2	kW
Resonant load impedance	1020	745	Ohms
Driving impedance	35	32	Ohms

Cathode-Driven Class C RF Amplifier, CW or FM

Maximum Ratings			
DC plate voltage	7,000	V	
DC plate current	4.0	A	
Plate dissipation	20	kW	
Grid dissipation	500	W	

Typical Operation			
DC plate voltage	5000	7000	V
DC grid voltage	-210	-230	V
DC plate current	4.0	4.0	A
DC grid current*	0.84	0.775	A
Peak RF grid voltage*	510	555	V
Driving power	420	530	W
Plate output power	14.0	21.3	kW

Audio Frequency Amplifier or Modulator, Class B Grid Driven

Maximum ratings (per tube)			
DC plate voltage	7000	V	
DC plate current	5.0	A	
Plate dissipation	20	kW	
Grid dissipation	500	W	

Typical Operation (two tubes, sinusoidal waveform)			
DC plate voltage	5000	7000	Vdc
DC grid voltage	0	0	V
Zero-signal DC plate current*	0.8	1.2	A
Maximum-signal DC plate current	10	10	A
Maximum-signal DC grid current*	1.2	2.1	A
Peak AF grid voltage**	240	310	V
Peak driving power	290	560	W
Plate output power	31.0	47.7	kW
Load resistance (plate-to-plate)	1030	1520	Ohms

*Approximate values **Per tube

